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EXAMINER

TOOMER, CEPHIA D

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ALLEN A. ARADI and JAMES B. SMITH

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Appeal 2009-003057  
Application 10/696,618  
Technology Center 1700

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Decided:<sup>1</sup> July 7, 2009

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Before CHUNG K. PAK, TERRY J. OWENS, and MARK NAGUMO,  
*Administrative Patent Judges.*

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL  
STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1-28, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

*The Invention*

The Appellants claim methods for reducing spark ignited internal combustion engine combustion chamber deposit flaking and cold start emissions. Claim 1 is illustrative:

1. A method of reducing combustion chamber deposit flaking in spark ignited internal combustion engines that experience combustion chamber deposits and combustion chamber deposit flaking comprising the steps of:

supplying a fuel comprising an additive that includes a metal-containing compound to a spark ignited internal combustion engine having an advanced emissions control,

wherein the metal-containing compound is supplied in an amount effective to reduce combustion chamber deposit flaking.

*The References*

Henderson	3,179,506	Apr. 20, 1965
Dorer	4,664,677	May 12, 1987
Kaneko	5,401,280	Mar. 28, 1995

G.T. Kalghatgi and R.J. Price (Kalghatgi), “Combustion Chamber Deposit Flaking”, SAE Technical Paper 2000-01-2858 (2000).

*The Rejections*

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 1-8, 12-22, and 26-28 over Dorer in view of Kalghatgi; claims 1-3, 6-10, 12-17, 20-24, and 26-28 over Henderson in view of Kalghatgi; and claims 11 and 25 over Henderson in view of Kalghatgi and Kaneko.

OPINION

We affirm the Examiner’s rejections.

*Rejections of claims 1-8, 12-22, and 26-28 over Dorer  
in view of Kalghatgi, and claims 1-3, 6-10, 12-17, 20-24,  
and 26-28 over Henderson in view of Kalghatgi*

*Issue*

Have the Appellants shown reversible error in the Examiner's determinations that the applied prior art would have rendered prima facie obvious, to one of ordinary skill in the art, including the additive of Dorer or Henderson in the fuel of a spark ignited internal combustion engine having an advanced emissions control, and that the additive would reduce combustion chamber deposit flaking and cold start emissions?

*Findings of Fact*

Dorer discloses a fuel additive containing manganese and copper as salts of organic acids such as carboxylic, sulfonic or phosphorus-containing acids (col. 1, ll. 9-13). The manganese is present in an amount of about 0.05 to about 23 g-atoms per g-atom of copper (col. 1, ll. 60-64). The combined manganese and copper typically are present in the fuel in an amount of about 1-1000, preferably 5-350, ppm by weight (col. 7, ll. 13-18). The fuel can be gasoline (col. 7, ll. 22-23, 35-36). The disclosed use of the additive is "for reducing the ignition temperature of exhaust particulate from diesel engines" (col. 1, ll. 16-17).

Henderson discloses a gasoline additive comprising an organomanganese compound used in an amount of about 0.05 to less than about 2.0 grams of manganese per gallon of fuel, preferably 0.05 to 1.75 grams of manganese per gallon of fuel (col. 6, ll. 26-39). The additive improves knock resistance of spark ignition internal combustion engines (col. 1, ll. 12-15).

*Analysis*

The Examiner argues that due to the similarity of the additives of Dorer, Henderson, and the Appellants it appears that the additives of Dorer and Henderson, like that of the Appellants, would reduce combustion chamber deposit flaking in a spark ignited internal combustion engine having an advanced emissions control and would reduce cold start emissions from such an engine (Ans. 4, 7, 10). Discovery of a previously unappreciated property of the methods of Dorer and Henderson, the Examiner argues, does not render those methods patentable. *See id.*

The Appellants' manganese-containing compound, which can be in many inorganic or organic forms (Spec. 9), is added to fuel in an amount of about 1 to about 50 mg manganese per liter of fuel (Spec. 19). It appears undisputed that the manganese-containing compounds of Dorer and Henderson, added to fuel in amounts of, respectively, about 1-1000, preferably 5-350, ppm by weight (Dorer, col. 7, ll. 13-18) and about 0.05 to less than about 2.0 grams of manganese per gallon (Henderson, col. 6, ll. 26-36), would reduce combustion chamber deposit flaking in a spark ignited internal combustion engine having an advanced emission control such as a direct injection gasoline engine (claims 12 and 26), and would reduce cold start emissions from such an engine.

The Appellants argue that “[n]othing in Dorer or Henderson describes an engine having advanced emission controls” (Reply Br. 3).

It appears that one of ordinary skill in the art, through no more than ordinary creativity, would have added the manganese-containing compounds of Dorer or Henderson to fuels for engines generally, including spark ignited internal combustion engines having advanced emissions control, for the

purpose disclosed by Dorer (reducing the ignition temperature of exhaust particulate (col. 1, ll. 16-17; col. 7, l. 36)) or Henderson (improving knock resistance (col. 1, ll. 14-15)). *See KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (In making an obviousness determination one “can take account of the inferences and creative steps that a person of ordinary skill in the art would employ”).

For the above reasons we are not persuaded of reversible error in the Examiner’s rejections. Hence, we need not address the Examiner’s other rationale for obviousness (use of the additive of Dorer or Henderson as a detergent) or the Appellants’ arguments and the Declaration of Allen A. Aradi (filed Nov. 28, 2006) pertaining thereto.

*Conclusion of Law*

The Appellants have not shown reversible error in the Examiner’s determinations that the applied prior art would have rendered prima facie obvious, to one of ordinary skill in the art, including the additive of Dorer or Henderson in the fuel of a spark ignited internal combustion engine having an advanced emissions control, and that the additive would reduce combustion chamber deposit flaking and cold start emissions.

*Rejection of claims 11 and 25 over Henderson  
in view of Kalghatgi and Kaneko*

The Appellants do not separately argue dependent claims 11 and 25 (Br. 12-15; Reply Br. 1-2). For this reason and the reasons given above with respect to the independent claims 1 and 15 from which claims 11 and 25 respectively depend, we are not persuaded of reversible error in the rejection of claims 11 and 25.

DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 1-8, 12-22, and 26-28 over Dorer in view of Kalghatgi, claims 1-3, 6-10, 12-17, 20-24, and 26-28 over Henderson in view of Kalghatgi, and claims 11 and 25 over Henderson in view of Kalghatgi and Kaneko are affirmed.

It is ordered that the Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

PL Initial:

sld

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